

CURRICULUM VITA
WILLIAM D. COLLINS

TITLE:

Senior Scientist and Department Head Professor in Residence Earth Sciences Division Department of Earth and Planetary Science Lawrence Berkeley National Laboratory University of California, Berkeley Berkeley, California Berkeley, California

EDUCATION:

B.A., Physics (cum laude) Princeton University, 1981 M.S., Astronomy and Astrophysics University of Chicago, 1984 Ph.D., Astronomy and Astrophysics University of Chicago, 1988

PROFESSIONAL EXPERIENCE:

1989 – 1990 Post-Graduate Researcher University of Chicago 1990 – 1992 Post-Graduate Researcher Scripps Institution of Oceanography 1992 – 1997 Assistant Research Physicist Scripps Institution of Oceanography 1994 – 1994 Lecturer Scripps Institution of Oceanography 1996 – 1997 Visiting Scientist National Center for Atmospheric Research 1997 – 2001 Scientist II National Center for Atmospheric Research 2001 – 2007 Scientist III National Center for Atmospheric Research 2001 – 2007 Adjoint Professor PAOS Program, University of Colorado 2006 – 2007 Deputy Section Head National Center for Atmospheric Research 2007 – 2008 Senior Scientist National Center for Atmospheric Research 2007 – present Senior Scientist Lawrence Berkeley National Laboratory 2007 – present Department Head Lawrence Berkeley National Laboratory 2007 – present Professor in Residence University of California, Berkeley

PUBLICATIONS:

1 Recent peer-reviewed publications

- 1.1. Meehl, G.A., W.M. Washington, W.D. Collins, J.M. Arblaster, A. Hu, L.E. Buja, W.G. Strand, and H. Teng, 2005: How much more global warming and sea level rise? *Science*, 307, 1769–1772.
- 1.2. Santer, B.D., T.M.L. Wigley, K.E. Taylor, P.W. Thorne, M.F. Wehner, J.S. Boyle, W. Collins, K.W. Dixon, C. Doutriaux, P.J. Gleckler, J.E. Hansen, T.R. Karl, S.A. Klein, J.R. Lanzante, C. Mears, G.A. Meehl, V. Ramaswamy, D.J. Seidel, and F.J. Wentz, 2005: Modeled and observed lapse-rate changes in the deep tropics. *Science*, 309, 1551–1556.
- 1.3. Lamarque, J.F., J.T. Kiehl, P.G. Hess, W.D. Collins, L.K. Emmons, P. Ginoux, C. Lou, and X.X. Tie, 2005: Coupled chemistry-climate response to changes in aerosols emissions: global impact on the hydrological cycle and the tropospheric burdens of OH, ozone and NO_x. *Geophys. Res. Lett.*, 32, article no. L16809, doi:10.1029/2005GL023419.
- 1.4. Lamarque, J.F., J. Kiehl, G. Brasseur, T. Butler, P. Cameron-Smith, W.D. Collins, Collins, C. Granier, D. Hauglustaine, P. Hess, E. Holland, L. Horowitz, M. Lawrence, McKenna, P. Merilees, M. Prather, P. Rasch, D. Rotman, D. Shindell, and P. Thorn-ton, 2005: Assessing future nitrogen deposition and carbon cycle feedback using a multi-model approach. Part 1: Analysis of nitrogen deposition. *J. Geophys. Res.*, 110, article no. D19303, doi:10.1029/2004JD005463.
- 1.5. Collins, W.D., C.M. Bitz, M.L. Blackmon, G.B. Bonan, C.S. Bretherton, J.A. Carton, P. Chang, S.C. Doney, J.J. Hack, T.B. Henderson, J.T. Kiehl, W.G. Large, D.S. McKenna, Santer, and R.D. Smith, 2006: The Community Climate System Model: CCSM3. *Climate*, 19, 2122–2143.
- 1.6. Collins, W.D., P.J. Rasch, B.A. Boville, J.J. Hack, J.R. McCaa, D.L. Williamson, B.P. Briegleb, C.M. Bitz, S.-J. Lin, and M. Zhang, 2006: The formulation and atmospheric simulation of the Community Atmosphere Model: CAM3. *J. Climate*, 19, 2144–2161.
- 1.7. Kiehl, J.T., C.A. Shields, J.J. Hack, and W.D. Collins, 2006: The climate sensitivity of the Community Climate System Model: CCSM3. *J. Climate*, 19, 2584–2596.
- 1.8. Kinne, S., M. Schulz, C. Textor, S. Guibert, Y. Balkanski, S. Bauer, T. Berntsen, T. Berglen, O. Boucher, M. Chin, W. Collins, F. Dentener, T. Diehl, R. Easter, H. Feichter, D. Fillmore, S. Ghan, P. Ginoux, S. Gong, A. Grini, J. Hendricks, M. Herzog,

- L. Horowitz, I. Isaksen, T. Iversen, A. Jones, S. Kloster, D. Koch, M. Krool, A. Lauer, Lamarque, G. Lesins, X. Liu, U. Lohmann, V. Montanaro, G. Myhre, J. Penner, Pitari, S. Reddy, D. Roberts, O. Selander, P. Stier, T. Takemura, and X. Tie, 2006: An AeroCom initial assessment – optical properties in aerosol component modules of global models. *Atmos. Chem. Phys.*, 6, 1815–1834.
- 1.9. Meehl, G.A., W.M. Washington, B. Santer, W.D. Collins, J.M. Arblaster, A. Hu, D.M. Lawrence, H. Teng, L.E. Buja, and W.G. Strand, 2006: Climate change in the 20th and 21st centuries and climate change commitment in the CCSM3. *J. Climate*, 19, 2597–2616.
 - 1.10. Collins, W.D., V. Ramaswamy, M.D. Schwarzkopf, Y. Sun, R.W. Portmann, Q. Fu, Casanova, J.-L. Dufresne, D.W. Fillmore, P.M.D. Forster, V.Y. Galin, L.K. Gohar, W.J. Ingram, D.P. Kratz, M.-P. Lefebvre, J. Li, P. Marquet, V. Oinas, Y. Tsushima, Uchiyama and W.Y. Zhong, 2006: Radiative forcing by well-mixed greenhouse gases: Estimates from climate models in the IPCC AR4. *J. Geophys. Res.*, 111, article no. D14317, doi:10.1029/2005JD006713.
 - 1.11. Sun, D.Z., T. Zhang, C. Covey, S. Klein, W.D. Collins, J.J. Hack, J.T. Kiehl, G.A Meehl, I.M. Held, and M. Suarez, 2006: Radiative and dynamical feedbacks over the equatorial cold-tongue: Results from seven atmospheric GCMs. *J. Climate*, 19, 4059–4074.
 - 1.12. Gettelman, A., W.D. Collins, E.J. Fetzer, A. Eldering, and F.W. Irion, 2006: A satellite climatology of upper tropospheric relative humidity and implications for climate. *J. Climate*, 19, 6104–6121.
 - 1.13. Mahowald, N.M., M. Yoshioka, W.D. Collins, A.J. Conley, D.W. Fillmore, and D.B. Coleman, 2006: Climate response and radiative forcing from mineral aerosols during the last glacial maximum, pre-industrial, current, and doubled-carbon dioxide climates. *Geophys. Res. Lett.*, 33, article no. L20705, doi:10.1029/2006GL026126.
 - 1.14. Collins, W.D., J.M. Lee-Taylor, D.P. Edwards, and G.L. Francis, 2006: Effects of increased near-infrared absorption by water vapor on the climate system. *J. Geophys. Res.*, 111, article no. D18109, doi:10.1029/2005JD006796.
 - 1.15. Yoshioka, M., N.M. Mahowald, A.J. Conley, W.D. Collins, D.W. Fillmore, C.S. Zender, and D.B. Coleman, 2007: Impact of desert dust radiative forcing on Sahel precipitation: Relative importance of dust compared to sea surface temperature variations, vegetation changes and greenhouse gas warming. *J. Climate*, 20, 1445–1467.
 - 1.16. Meehl, G.A., J.M. Arblaster, and W.D. Collins, 2008: Effects of black carbon aerosols on the South Asian Monsoon. *J. Climate*, 21, 2869–2882.
 - 1.17. Iacono, M.J., J.S. Delamere, E.J. Mlawer, M.W. Shephard, S.A. Clough, and W.D. Collins, 2008, Radiative forcing by long-lived greenhouse gases: Calculations with the AER radiative transfer models, *J. Geophys. Res.*, 113, article no. D13103, doi:10.1029/2008JD009944.
 - 1.18. Jensen, M.P., A.M. Vogelmann, W.D. Collins, G.J. Zhang, and E. Luke, 2008: Investigation of regional and seasonal variations in marine boundary layer cloud properties from MODIS observations. *J. Climate* 21, 4955–4973.
 - 1.19. Collins, W. D., and M. Satoh, 2009: Simulating global clouds: Past, present and future. Perturbed Clouds in the Climate System: Report of the Ernst Strungmann Forum, R.J. Charlson and J. Heintzenberg, eds., Frankfurt, Germany, March 27, 2008, MIT Press.
 - 1.20. Quaas, J., S. Bony, W.D. Collins, L. Donner, A. Illingworth, A. Jones, U. Lohmann, M. Satoh, S.E. Schwartz, W.-K. Tao, and R. Wood, 2009: Current understanding and quantification of clouds in the changing climate system and strategies for reducing critical uncertainties. Perturbed Clouds in the Climate System: Report of the Ernst Strungmann Forum, R.J. Charlson and J. Heintzenberg, eds., Frankfurt, Germany, March 27, 2008, MIT Press.

National and international assessments

- 2.1. Santer, B.D., J.E. Penner, P.W. Thorne, W. Collins, K. Dixon, T.L. Delworth, C. Doutriaux, C.K. Folland, C.E. Forest, I.M. Held, J.R. Lanzante, G.A. Meehl, V. Ramaswamy, D.J. Seidel, M.F. Wehner, and T.M.L. Wigley, 2006: How well can the observed vertical temperature changes be reconciled with our understanding of the causes of these temperature changes? in Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences. T.R. Karl, S.J. Hassol, C.D. Miller, and W.L. Murray, editors, 2006. A Report by the Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

- 2.2. Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A. Gaye, J. Gregory, A. Kitoh, R. Knutti, J. Murphy, A. Noda, S. Raper, I. Watterson, A. Weaver, Z.-C. Zhao, J. An-nan, J. Arblaster, C. Bitz, A. le Brocq, P. Brockmann, L. Buja, G. Clarke, M. Collins, E. Driesschaert, N.A. Diansky, K. Dixon, J.-L. Dufresne, J. Kyurgerov, J. Eby, N. Edwards, S. Emori, P. Forster, R. Furrer, J. Hansen, G. Hegerl, M. Holland, A. Hu, P. Huybrechts, F. Joos, J. Kettleborough, M. Kimoto, M. Krynytzky, M.-F. Loutre, J. Lowe, M. Meinshausen, S. M'uller, S. Nawrath, J. Oerlemans, T. Palmer, A. Payne, G.-K. Plattner, J. R"ais"anen, G.L. Russell, A. Rinke, D. Salas y Melia, G. Schmidt, B. Schneider, A. Shepherd, D. Stainforth, C. Tebaldi, H. Teng, L. Terray, A. Sokolov, P. Stott, E.M. Volodin, B. Wang, T.M.L. Wigley, Y. Yu, and S. Yukimoto, 2007: Chapter 10: Global Climate Projections, in Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.
- 2.3. Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D. Fahey, J. Haywood, J. Lean, D. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz, R. Van Dorland, G. Bodeker, G. Boer, O. Boucher, W.D. Collins, T.J. Conway, E. Dlugokencky, J. Elkins, D. Etheridge, P. Fraser, D. Keeling, S. Kinne, K. Lassey, U. Lohmann, A. Manning, S. Montzka, D. Oram, K. O'Shaughnessy, S. Piper, M. Ponater, N. Ramankutty, K. Rosenlof, R. Saussen, M.D. Schwarzkopf, G. Stenchikov, N. Stuber, C. Textor, R. Wang,, R. Weiss, and T. Whorf, 2007: Chapter 2: Changes in Atmospheric Constituents and in Radiative Forcing, in Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.
- 2.4. Hegerl, G., F. Zwiers, P. Braconnot, N. Gillett, Y. Luo, J. Marengo, N. Nicholls, J. Penner, P. Stott, M. Allen, C. Ammann, N. Andronova, R. Betts, A. Clement, W.D. Collins, S. Crooks, T. Delworth, R. van Dorland, C. Forest, P. Forster, H. Goosse, J. Gregory, D. Harvey, F. Joos, G. Jones, J. Kenyon, J. Kettleborough, R. Knutti, H. Lambert, M. Lavine, D. Levinson, V. Masson, T. Nozawa, B. Otto-Bliesner, D. Pierce, S. Power, D. Rind, L. Rotstayn, B.D. Santer, C. Senior, S. Stark, D. Stone, S. Tett, P. Thorne, M. Wang, B. Wielicki, T. Wong, L. Xu, X. Zhang, and E. Zorita, 2007: Chapter 9: Understanding and Attributing Climate Change, in Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.

AWARDS:

3 Academic Recognition

Contributor (lead author) for the Fourth Assessment Report by the Intergovernmental Panel on Climate Change, co-recipient of the 2007 Nobel Peace Prize.

SERVICE:

4 Service Activities (last 10 years)

4.1 Committees and activities for climate assessments

Panelist, National Academy Climate Sensitivity Workshop, 2003. Invited participant, Joint WGCM CFMIP/IPCC expert meeting on Climate Sensitivity and Feedbacks, 2004. Lead and collaborating author, IPCC Working Group I Fourth Assessment Report, 2004 – 2007. Expert reviewer, IPCC Working Group I Fourth Assessment Report, 2005 – 2006.

4.2 Editorial service

Editor, Journal of Climate, 2007 – 2008.

4.3 Meeting organizer for climate assessments

Member, Organizing Committee, IPCC Working Group I Workshop on Climate Sensitivity, Jul. 2004, Paris, France.

4.4 Public dissemination of assessment results

Collins, W., R. Colman, J. Haywood, M.R. Manning, and P. Mote, 2007: The Physical Science behind Climate Change. Scientific American, August issue.

4.5 Climate modeling activities

Co-chair, NCAR Atmospheric Model Working Group, 2001 – 2003. Chair, DOE-NSF Community Climate System Model Scientific Steering Committee, 2003 – 2005. Member, CCSM Scientific Steering Committee, 2006 – present.